



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H02K 3/40, 3/50	A1	(11) International Publication Number: WO 97/45928 (43) International Publication Date: 4 December 1997 (04.12.97)
(21) International Application Number: PCT/SE97/00899 (22) International Filing Date: 27 May 1997 (27.05.97) (30) Priority Data: 9602079-7 29 May 1996 (29.05.96) SE 9602096-1 29 May 1996 (29.05.96) SE (71) Applicant (for all designated States except US): ASEA BROWN BOVERI AB [SE/SE]; S-721 83 Västerås (SE). (72) Inventors; and (75) Inventors/Applicants (for US only): LEIJON, Mats [SE/SE]; Hyvlargatan 5, S-723 35 Västerås (SE). LARSSON, Bertil [SE/SE]; Sammettsvägen 12, S-724 76 Västerås (SE). KALLDIN, Hans-Olof [SE/SE]; Grenadjärgatan 9, S-723 46 Västerås (SE). BERGGREN, Sören [SE/SE]; Vetterstorpsgatan 30, S-724 62 Västerås (SE). (74) Agent: STOLT, Lars, C.; L.A. Groth & Co. KB, P.O. Box 6107, S-102 32 Stockholm (SE).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, ES, FI, FI (Utility model), GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i>
(54) Title: A DEVICE IN THE STATOR OF A ROTATING ELECTRIC MACHINE		
(57) Abstract		
<p>A device for avoiding wear between the cables in coil-end packages on the stator (1) in a rotating electric machine comprises a resilient layer (10) in the contact area between two cables (4). The cables (4) are mutually secured by a securing device (12). The resilient layer (10) permits a certain relative movement between the cable (4) due to skewing of the resilient material and not due to sliding in the contact area. The thickness of the resilient layer (10) is chosen taking into consideration the relative movement permissible. The cables comprise at least one current-carrying conductor (6), a first layer (7) having semi-conductive properties provided around said conductor (6), a solid insulating layer (8) provided around said first layer (7), and a second layer (9) having semi-conducting properties provided around said insulating layer (8).</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 97/00899

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H02K 3/40, H02K 3/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H02K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5036165 A (R.ELTON ET AL), 30 June 1991 (30.06.91), see the whole document	1,8
Y	--	2-7
Y	US 4367425 A (M.A.MENDELSSON ET AL), 4 January 1983 (04.01.83), column 1, line 7 - line 13, figure 2	2-5
A	EP 0309096 A2 (WESTINGHOUSE ELECTRIC CO.), 29 March 1989 (29.03.89), abstract	2-7
	--	

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

27 October 1997

Date of mailing of the international search report

30 -10- 1997

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Anders Axberger
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 97/00899

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9406194 A1 (ELIN ENERGIEVERSORGUNG GESELLSCHAFT M.B.H.), 17 March 1994 (17.03.94), abstract --	2-7
A	US 3560777 A (WERNER MOELLER DUBENDORF ET AL), 2 February 1971 (02.02.71), abstract --	2-7
A	US 4588916 A (R.J.LIS), 13 May 1986 (13.05.86), abstract --	2-7
A	US 4618795 A (G.D.COOPER ET AL), 21 October 1986 (21.10.86), abstract -- -----	2-7

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/10/97

International application No.

PCT/SE 97/00899

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5036165 A	30/06/91	US 5066881 A US 5067046 A CA 1245270 A US 4853565 A	19/11/91 19/11/91 22/11/88 01/08/89
US 4367425 A	04/01/83	BE 893377 A CA 1188842 A JP 1637367 C JP 3002187 B JP 57209907 A	01/12/82 11/06/85 31/01/92 14/01/91 23/12/82
EP 0309096 A2	29/03/89	CA 1283685 A CN 1031629 A JP 1089936 A US 4800314 A	30/04/91 08/03/89 05/04/89 24/01/89
WO 9406194 A1	17/03/94	AT 180892 A AT 399790 B CA 2144046 A CN 1033678 B CN 1085021 A DE 59302528 D EP 0659307 A,B JP 8501437 T	15/11/94 25/07/95 17/03/94 25/12/96 06/04/94 00/00/00 28/06/95 13/02/96
US 3560777 A	02/02/71	CH 479975 A DE 1933221 A FR 2015929 A SE 356179 B	15/10/69 26/02/70 30/04/70 14/05/73
US 4588916 A	13/05/86	CA 1250881 A	07/03/89
US 4618795 A	21/10/86	BE 904580 A CN 1005440 B FR 2587554 A JP 2050405 C JP 7085632 B JP 61244239 A KR 9401362 B	10/10/86 11/10/89 20/03/87 10/05/96 13/09/95 30/10/86 19/02/94